



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Great Lakes Region  
Illinois, Indiana, Michigan  
Minnesota, North Dakota,  
Ohio, South Dakota,  
Wisconsin

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POLICY AND PROCEDURES MEMORANDUM - AIRPORTS DIVISION

NUMBER: 5300.4A

DATE: April 2, 2003

SUBJECT: General Guidance on Runway/Taxiway Safety Areas

REFERENCE:

1. Advisory Circular 150/5300-13 - Airport Design
2. FAR Part 139 - Certification and Operations:  
Land Airports Serving Certain Air Carriers
3. FAA Order 5280.5B - Airport Certification  
Program Handbook.
4. FAA Order 5200.8 - Runway Safety Area Program
5. Policy And Procedure Memorandum 5050.5C -  
Planning: Airport Layout Plan Approval and  
Airport Master Plan Acceptance

APPENDIX 1. Background

APPENDIX 2. Changes From Prior PPM

APPENDIX 3. Runway Safety Area (RSA) Survey Requirements For  
Runways

APPENDIX 4. Sample RSA Determinations

1. Background: The excerpts from current FAA guidance documents, contained in Appendix 1, when considered collectively may be confusing and when considered separately could foster inconsistent determinations of the safety area standard to be applied at a specific airport. This PPM provides guidelines that will assist planners and engineers in selecting the proper safety areas for facilities at any airport.

2. Policy/Procedures. Safety areas are to be kept free of all objects (except for frangibly mounted structures that need to be located in the safety area because of their function), cleared, graded, drained, and capable (under dry conditions) of supporting snow removal equipment, aircraft rescue and fire fighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft. These areas surround runways and taxiways and are suitably prepared to reduce

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BIS-ADO; CHI-ADO; DET-ADO; MSP-ADO/AGL-200/400/500  
Block Grant States (through ADO's)  
Other State Aviation Directors (information through ADO's)



the risk of damage to airplanes in the event the aircraft overshoot, undershoot or unintentionally depart the runway or taxiway operating surfaces.

a. General

(1) Current runway and taxiway safety area dimensional standards are contained in Advisory Circular 150/5300-13, Airport Design (Runway safety areas - Tables 3-1, 3-2, & 3-3; Taxiway safety areas - Table 4-1).

(a) The runway safety area extensions, beyond the runway end, begin at each runway end when a stopway is not provided. When a stopway is provided, these lengths are measured from the stopway end.

(b) For Airport Reference Codes C-I and C-II, a runway safety area width of 400 feet is permissible.

(2) When the FAA upgrades a safety area standard, airport operators should, to the extent practicable, include the upgrade in their airport planning documents (Approved ALP for obligated airports).

(3) Runway Safety Areas. Prior to issuing a FAR Part 139 certificate for an airport, designating a runway for use by FAR Part 139 air carriers, or starting future runway construction, reconstruction, or significant expansion that results in changing the capability of the airport (see FAA Orders 5200.8 and 5280.5B for the definition of reconstruction and significant expansion) at FAR Part 139 certificated, or at Federally obligated airports when the project involves Federal funds, the airport owner/operator shall conduct a survey to obtain information for an analysis of the RSA's for that runway. These surveys shall be conducted in accordance with the "Runway Safety Area (RSA) Survey Requirements For Runways" (See Appendix 3). The certification inspector for FAR Part 139 airports or the ADO/Block Grant State (non-FAR Part 139 runways) will field verify the survey information and determine the frangibility of all objects in the RSA. The ADO/Block Grant State may accept a certification in lieu of field verifying the survey data for non-FAR Part 139 runways. If the ADO/Block Grant State determine that adequate information is available, a survey may not be necessary.

**NOTE:** Development that changes a non-precision instrument runway to a precision instrument runway is considered to be significant expansion that changes the capability of the airport.

(a) It may be necessary to have the airport owner develop the necessary supporting documentation as preliminary engineering for the project. The ADO/Block Grant State shall initiate the necessary airspace coordination as required to determine the feasibility of the viable alternatives and the recommended alternative. Based on the survey information, supporting documentation (planning, environmental, and engineering), and the airspace coordination responses, the ADO will prepare the draft RSA determination in accordance with FAA Order 5200.8. Samples of RSA determinations are included in Appendix 4. Also, the ADO shall request concurrence from AGL-470 that all NavAids within the RSA are constructed with the frangible point at the lowest practical height that is possible to achieve at this time.



(b) At constrained airports, where it is impracticable to provide the full runway safety area, declared distances may be implemented to provide for the runway safety area requirements. Procedures for implementing declared distances are in PPM 5300.2 "Guidance on Declared Distance Standards".

(c) Block Grant States may prepare and approve Runway Safety Area Determination's for RSA's that meet current standards and those RSA's that can be improved to meet current standards contained in AC 150/5300-13. However, FAA reserves the right to override any Block Grant State RSA determination decision.

(d) The ADO Manager/Block Grant State shall review the data for each RSA and make one of the following determinations:

1 The existing RSA meets the current standards in AC 150/5300-13.

2 The existing RSA does not meet the current standards, but it is practicable to improve the RSA so that it will meet current standards.

(e) The ADO/Block Grant State will prepare the draft RSA determination and the ADO Manager will submit the draft RSA determinations, for which the RSA cannot be improved to meet current design standards, through AGL-620 to AGL-600. The Regional Airports Division Manager (AGL-600) shall review the recommended draft RSA determinations and make one of the following determinations:

1 The existing RSA can be improved to enhance safety, but the RSA will still not meet current standards.

2 The existing RSA does not meet current standards, and it is not practicable to improve the RSA.

(f) If new information becomes available, the ADO Manager/Block Grant State/AGL-600 may issue a revised RSA determination. The ADO/Block Grant State will continually analyze the non-standard RSA's with respect to operational, environmental, and technological changes and revise the RSA determination as appropriate.

(4) Taxiway Safety Areas. Prior to starting future development at FAR Part 139 certificated or Federally obligated airports, the airport owner/operator shall ensure that the taxiway safety areas are in accordance with the current safety area design standards. A modification to standards, approved by the ADO/Block Grant State, is required for all taxiway safety areas that do not meet the current design standards.

(a) The ADO/Block Grant State is required to determine the effect that any proposed modification to standards for a taxiway safety area, would have on the safety of persons and property on the ground.

(b) The regional coordination for the modification to standards shall be accomplished in accordance with PPM 5320.1.

(c) The ADO/Block Grant State will consider the regional coordination comments in making their decision.



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(5) FAA's intent is to protect runway and taxiway safety areas and not to permit the safety area dimensions to be reduced once FAA has issued an RSA determination or has approved a modification to standards for a specific set of operational conditions. Also, the design standard safety areas shall be maintained in their present condition, with only safety enhancements permitted.

(6) When an RSA determination is made or a modification to the taxiway safety area standards is approved to provide a safety area less than that required by the current design standard, future development shall not be permitted, nor shall a future RSA determination or modification to standards be issued to provide for future development in either the design standard safety areas or the less than standard safety areas for that airport.

(7) To the extent practicable, the FAA-approved ALP must conform to the FAA airport design standards existing at the time of its approval. The current design standard safety areas and the safety areas in the RSA determination or modification to standards shall be depicted or described on the FAA-approved airport layout plan (ALP). Airport operators are encouraged to depict or describe these same safety areas in the Airport Certification Manual/Airport Certification specification (ACM/ACS).

b. Obligated Airports. Airport operators must provide and maintain the runway and taxiway safety areas that are the result of an RSA determination or modification to standards and are depicted or described on the FAA-approved ALP. Also, the design standard safety areas must be maintained in their present condition, with only safety enhancements permitted.

(1) If construction, reconstruction (includes overlays), or significant expansion (runway extensions of 500 feet or more are considered significant for this PPM, also see paragraph 2.a.(3)) clearly provides for a different critical aircraft or provides for increased payload or range for the critical aircraft (exceeding the design parameters upon which the approved ALP was based), changes the load-bearing strength of the pavement, or restores the original design life of the pavement, then the safety areas for the applicable aircraft operating surface shown on the ALP must be upgraded in accordance with the current FAA design standard to the extent practicable. This requirement to comply with the current safety area design standard applies to the total operating surface being upgraded and to both ends of a runway that is upgraded. For example, a 500-foot runway extension to accommodate aircraft that impose an expanded runway safety area would require the same runway safety area to be provided at both ends of the runway.

(2) A change in safety area requirements could be necessitated by a change in aircraft reference code (ARC) from that of the previous critical aircraft for the airport/airport facility. If the ARC for aircraft that are to operate at the airport (at least 500 annual operations forecasted) is different from the ARC of the critical aircraft on which the approved ALP was based, then the safety areas for the applicable aircraft operating surfaces shown on the ALP must be changed to reflect the current FAA design safety area standard.

(3) If a change in a safety area, in accordance with current FAA design standards, is required and the full safety area cannot be provided, then an RSA survey (including an analysis and supporting documentation) and subsequent FAA/Block Grant State RSA



determination must be made for the runway (see paragraph 2.a.(3)) or a modification to design standards (see paragraph 2.a.(4) and PPM 5320.1) must be approved by the ADO/Block Grant State for the taxiway safety area, before the airport change is implemented and/or prior to designating a new critical aircraft.

(4) The ADO Manager will submit the draft RSA determinations, for which the RSA cannot be improved to meet current design standards, through AGL-620 to AGL-600. The AGL-600 RSA determination will be provided to AGL-620, who will distribute it to the ADO.

(5) The ALP must be revised to reflect the airport change, FAA RSA determination, and/or a modification to standards. The revised ALP must be approved by the FAA/Block Grant State.

c. Obligated FAR Part 139 Airports. The above requirements for obligated airports are applicable to obligated FAR Part 139 airports. In addition to those requirements, the following apply:

(1) Airport operators of FAR Part 139 airports are required to provide and maintain runway safety areas (RSA's) and taxiway safety areas (TSA's) consistent with those specified in the Airport Certification Manual (ACM)/Airport Certification Specification (ACS). The airport operator must ensure that the ACM/ACS safety areas are not less than those that actually existed, as of January 1, 1988 (or later, if revised due to construction approved by FAA/Block Grant State). The safety areas required by FAR Part 139 might be different than the safety areas required by the airport operators grant obligations (see paragraph 2.b.)). The airport operator must provide and maintain safety areas with dimensions that will meet or exceed both requirements. The airport operator should be encouraged to provide and maintain safety areas in their ACM/ACS that are the same as those depicted on the approved ALP on file with the FAA and that these safety areas are in accordance with an FAA/Block Grant State RSA determination and all approved modifications to standards for that airport. In the case of conflict, the FAA/Block Grant State RSA determination and the modification to standards will always take precedence over the approved ALP. The approved ALP will take precedence over the ACM/ACS, however the safety areas in the ACM/ACS are the safety areas that meet the FAR Part 139 requirements.

(2) The FAA/Block Grant State RSA determination is acceptable for meeting FAR Part 139 RSA requirements.

(3) A modification to standards for taxiway safety areas, approved by the ADO/Block Grant State, is acceptable to FAA for meeting FAR Part 139 taxiway safety area requirements.

(4) ADO's/Block Grant States are to coordinate proposed modifications to standards for taxiway safety areas at certificated airports with the Airports Safety/Standards Branch (AGL-620) for the FAR Part 139 review. A copy of the approval letter for the modifications to standards is to be provided to AGL-620 to assure that the airport operator is in compliance with FAR Part 139.

(5) Airport operators of FAR Part 139 airports should be encouraged to update the ACM/ACS to reflect FAA/Block Grant State RSA determinations and modification to standards for safety areas, and when required by FAR Part 139 a statement of practicability is to be provided as to why the applicable design standard could not be obtained. This statement should be based on the analysis provided in accordance with



paragraph 5. The FAA airport certification inspectors must approve the revised ACM/ACS.

d. Non-Obligated FAR Part 139 Airports. Airport operators of non-obligated FAR Part 139 airports are required to provide and maintain the runway and taxiway safety areas that are consistent with those specified in their ACM/ACS. The airport operator must ensure that the ACM/ACS safety areas are not less than those that actually existed, as of January 1, 1988 (or later, if revised due to construction approved by FAA/Block Grant State). Also, the airport operator should be encouraged to provide safety areas that are the result of an FAA/Block Grant State RSA determination or variances to design standards and to update their ACM/ACS to reflect the FAA/Block Grant State RSA determination and variances to design standards. When required by FAR Part 139, a statement of practicability is to be provided as to why the applicable design standard could not be obtained. This statement should be based on the analysis provided in accordance with paragraph 5. In the case of conflict, the FAA/Block Grant State RSA determination and the FAA/Block Grant State concurred in variance to the standards will always take precedence however the safety areas in the ACM/ACS meet FAR Part 139 requirements. The airport operator must maintain the safety areas in the ACM/ACS and should be encouraged to provide and maintain the design standard safety areas in their present condition, with only safety enhancements permitted.

(1) If construction, reconstruction (includes overlays), or significant expansion (runway extensions of 500 feet or more are considered significant, also see paragraph 2.a.(3)) clearly provides for a different critical aircraft or provides for increased payload or range for the critical aircraft (exceeding the design parameters upon which the RSA determination or variance to design standards was based), changes the load-bearing strength of the pavement, or restores the original design life of the pavement, then the safety areas for the applicable aircraft operating surface included in the ACM/ACS must be upgraded in accordance with the current FAA design standard to the extent practicable. This requirement to comply with the current safety area design standard applies to the total operating surface being upgraded and to both ends of a runway that is upgraded. For example, a 500-foot runway extension to accommodate aircraft that impose an expanded runway safety area would require the same runway safety area to be provided at both ends of the runway.

(2) A change in safety area requirements could be necessitated by a change in aircraft reference code (ARC) from that of the previous critical aircraft for the airport/airport facility. If the ARC for aircraft that are to operate at the airport (at least 500 annual operations forecasted) is different from the ARC of the critical aircraft on which the ACM/ACS was based, then the safety areas for the applicable aircraft operating surfaces included in the ACM/ACS must be changed to reflect the current FAA design safety area standard.

(3) If a change in a safety area, in accordance with current FAA design standards, is required and the full safety area cannot be provided, then an RSA survey (including an analysis and supporting documentation) and subsequent FAA/Block Grant State determination must be made for the runway (see paragraph 2.a.(3)) or a variance to design standards (see paragraph 2.a.(4) and PPM 5320.1) must be concurred in by the ADO/Block Grant State for the taxiway safety area, before the airport change is implemented and/or prior to designating a new critical aircraft.



(4) The FAA/Block Grant State RSA determination is acceptable for meeting FAR Part 139 RSA requirements.

(5) A variance to the standards for safety areas, concurred in by the ADO/Block Grant State, is acceptable to the FAA for meeting FAR Part 139 taxiway safety area requirements.

(6) The ADO Manager will submit the draft RSA determinations, for which the RSA cannot be improved to meet current design standards, through AGL-620 to AGL-600. The AGL-600 RSA determination will be provided to AGL-620, who will distribute it to the ADO.

(7) ADO's/Block Grant States are to coordinate proposed variances to design standards for safety areas at certificated airports with the Safety/Standards Branch for FAR Part 139 review. A copy of the concurrence letter for the variance to design standards is to be provided to AGL-620 to assure that the airport operator is in compliance with FAR Part 139.

(8) Airport operators of FAR Part 139 airports should be encouraged to update the ACM/ACS to reflect FAA/Block Grant State RSA determinations and variances to standards for safety areas, and when required by FAR Part 139 a statement of practicability is to be provided as to why the applicable design standard could not be obtained. This statement should be based on the analysis provided in accordance with paragraph 5. The FAA airport certification inspector must approve the revised ACM/ACS.

e. Other Non-Obligated Airports. Airport operators should be encouraged to provide and maintain runway and taxiway safety areas in accordance with current FAA design standards. To the extent practicable, these airports should comply with the current FAA design standards for safety areas. If a change in the safety area, in accordance with current FAA design standards, is necessitated by the FAR Part 157 proposal and the full safety area is not proposed/cannot be provided, then the ADO/Block Grant State is required to determine the effect that the proposed safety area would have on the safety of persons and property on the ground. This determination is normally accomplished through the airspace review process (reference FAA Order 7400.2). The ADO/Block Grant State will rely upon CHI-FPO/AGL-400/AGL-500/ AGL-700 coordination, as appropriate, in making this determination.

### 3. Restriction On Safety Area Use At Obligated and FAR Part 139 Airports.

a. Future development shall not be permitted within existing and planned airport safety areas. An RSA determination/modification to standards shall not be approved to provide for future development in safety areas.

b. Airport roadways (Airway facilities maintenance roads, perimeter roads, safety and security roads, etc.) should not be permitted within safety areas and an RSA determination/modification to standards should not be issued to permit an airport roadway in safety areas. Existing roadways should be relocated outside of the safety areas to the extent practicable. If it is not feasible to relocate the roadway, all roadway grading must conform to the safety area grading criteria (AC 150/5300-13, chapter 5) and the access into the safety area must be controlled by appropriate signs and airport operational procedures that are acceptable to the FAA. At controlled airports, vehicles operating



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within the safety areas must maintain two-way radio contact with the ATCT. On FAR Part 139 airports, the signing and operational procedures must be included in the ACM/ACS, which must be approved by the certification inspector prior to implementation.

(1) Navaid Access and Maintenance Roadways Within Safety Areas. The RSA and TSA standards, as defined in AC 150/5300-13, paragraph 211, preclude all objects, including people, equipment, and vehicles, except for objects that need to be located in the RSA or TSA because of their function. Airway Facilities and airport owner access/maintenance roadways, to serve Navaid facilities that are located in the safety areas because of their function, will be permitted in the RSA's and TSA's.

(a) An RSA determination is required to permit a roadway within the standard RSA and a modification to standards is required to permit a roadway within the standard TSA. An RSA determination or a modification to taxiway safety area standards would have to be accomplished, if the roadway cannot meet the applicable grading criteria or if the roadway would cause a reduction of the safety areas.

(b) Existing and proposed Navaid access/maintenance roadways should be depicted on the approved ALP.

(c) At all airports, Navaid access/maintenance roadways should be sited, designed, and constructed along the following guidelines, to the maximum extent practicable:

1. Access/maintenance roadways should not connect directly to a runway or a taxiway, unless there is no feasible alternative.

2. Access/maintenance roadways should not join taxiways on the runway side of taxiway/runway holdlines.

3. A standard highway stop sign, mounted on frangible couplings and at a height that does not interfere with aircraft operations, should be installed prior to the access/maintenance roadway entering a runway or taxiway safety area.

4. Where possible, entry to the access/maintenance roadways should be via an airport access or perimeter roadway.

(2) Airports Division (Certification Inspectors/ADO/Block Grant State) will help identify existing AF and airport-owned, candidate roadways for relocation outside the safety areas, based on field reviews (FAR Part 139 inspections and other site visits). Airport owners, Airway Facilities (AGL-470) and Airports (ADO/Block Grant State) will collectively determine if it is feasible and practicable to relocate the identified existing Navaid roadway outside the safety areas and will establish a relocation schedule for those roadways.

c. An RSA determination/modification to standards generally should not be issued to provide for open ditches and drainage facilities within the safety area. To the extent practicable, all existing open ditches that pass through safety areas shall be enclosed. Drainage structures (manholes, inlets, head walls, etc.) to be located in safety areas due to their function shall conform to the height, grading and



loading requirements for the safety area involved. Drainage swales that conform to the safety area grading requirements may be permitted within the safety area, providing no ponding, erosion, or soft areas are developed. A runway safety area survey and analysis is required for an AGL-600 RSA determination to allow the ditches and drainage facilities to be within the design standard safety area and to permit the runway safety area length to be reduced to the ditch or drainage facility location. The ADO/Block Grant State is responsible for modifications to standards to permit ditch and drainage facilities within the design taxiway standard safety areas.

d. Nav aids and related facilities that need to be located in the safety areas because of their function shall be constructed on low impact resistant supports (frangibly mounted structures).

(1) Localizer antennas (for ILS), guide slope antennas (for ILS), azimuth antennas (for MLS), elevation antennas (for MLS), non-directional beacons (NDB), marker beacons, very high frequency omnirange (VOR), and related facilities (shelters, transformers, etc.) functionally do not have to be located in safety areas.

(2) These Nav aids and related facilities may be located within safety areas only if there is no feasible or practicable alternative for their location. The Nav aid mountings must meet the frangibility requirements of AC 150/5300-13 paragraphs 211.a.(2) and 305.a.(4), or have the frangible point at the lowest practical height and an RSA determination (runway safety areas) or a modification to standards (taxiway safety areas) for their location must be signed/approved by the ADO/Block Grant State. If the RSA does not meet the current FAA design standard, the RSA determination will be made by AGL-600. Locating these Nav aids within safety areas may impact standards for siting the Nav aid and may require approval from AAS-1. ANI-400 is responsible for obtaining approval for deviations of the Nav aid siting criteria. The ADO/Block Grant State is responsible for signing the RSA determination and approving modifications to standards to permit these Nav aids to be in the design standard safety area.

(3) To facilitate the necessary coordination and to ensure consistent application of criteria, AGL-620 shall be advised of all RSA determinations or modification to standards that will permit a Nav aid to be in the current design standard safety areas

(4) AGL-600 is responsible for signing an RSA determination, which is recommended by the ADO, for reducing the RSA to permit non-frangible Nav aids that have been located in the standard design RSA.

(5) When it is impractical to site a localizer antenna array beyond the end of the current runway safety area design standard, and when it is not practicable to offset the localizer to the side to keep it clear of the RSA, it may be located within the RSA under the following conditions:

(a) Any existing or proposed localizer antenna array meeting the 3-inch criterion, or having its frangible point at the lowest practical height, will require an RSA determination (see FAA Order 5200.8) to permit the localizer to remain or to be constructed within the current RSA design standard. The RSA determination must consider relocating/placing the localizer to provide the maximum length of RSA from the runway end to the localizer array that is practicable to obtain. If the localizer cannot be sited to maximize the RSA length,



subject to the RSA determination, the runway safety area will extend beyond the localizer antenna array. The grading around the localizer array foundations, including the wrap-around area, must conform to the safety area grading criteria (AC 150/5300-13, chapter 5). The required RSA, the RSA provided, and the RSA determination must be depicted/referenced on the approved airport layout plan. It is recommended that the required RSA, the RSA provided, and the RSA determination be incorporated into the ACM/ACS.

(b) Any existing or proposed localizer antenna array NOT having the frangible point at the lowest practical height should not be permitted or installed within the current RSA design standard for a runway. If practicable, the localizer should be replaced with a unit that meets the 3-inch criterion, or has its frangible point at the lowest practical height. If it is not practicable to replace the localizer with one that meets current design standards, an RSA determination to permit the localizer to remain or to be constructed within the current RSA design standard is required. The effective RSA would end at the front row of localizer antenna supports. The effective RSA must conform to the safety area grading criteria (AC 150/5300-13, chapter 5). The remainder of the RSA outbound of the front row of localizer antenna supports, to the extent practicable, should also be graded to conform to safety area grading criteria. The required RSA, the effective RSA, and the RSA determination must be depicted/referenced on the approved airport layout plan. It is recommended that the required RSA, the effective RSA, and the RSA determination be incorporated into the ACM/ACS.

(c) Airports Division should work closely with the airport owner and the AF Division until the configuration of the RSA and localizer are mutually acceptable. When the configuration is mutually acceptable, Airports should support AF's National Airspace System (NAS) Change Proposal (NCP) waiver request for non-standard localizer siting, if AF determines that an NCP waiver is required.

(6) To avoid massive towers for approach lights, the RSA grades may be constructed to a lesser than the standard grade. The change in grading must be addressed in a revised RSA determination.

e. Storm water retention or detention basins and farming shall not be permitted within the safety areas for the specific airport.

4. Conditions for Reduced Safety Area Acceptance. An AGL-600 RSA determination for reducing the RSA and/or a modification to standards for a taxiway safety area should only be granted when the following conditions are met:

- a. There is no feasible alternative.
- b. The maximum safety area practicable is provided for the operating surface involved.
- c. Safe aircraft operations can be ensured.
- d. It is not feasible to implement declared distances (runway safety areas only).

5. Documentation of Reduced Safety Area Acceptance. When it is appropriate, a request for an AGL-600 RSA determination and/or a request for a modification to standards for a taxiway safety area must be properly documented. The ADO/Block Grant State shall provide the



airport owner a copy of the RSA determination and formally issue the modification to standards in a letter to the airport owner (ALP approval letter prepared in accordance with PPM 5050.5C is acceptable). The determination and/or the variance/modification to standards must be supported by the following documentation:

a. RSA determinations shall be prepared in accordance with FAA Order 5200.8. Sample RSA determinations are included as Appendix 4.

b. Variances/Modification to Standards


(1) Describe the proposed variance/modification.

(2) Discuss the standards requiring a variance/modification and why the standards cannot be met. It is recommended that this discussion identify the existing and planned aircraft operational demand that justifies the dimensional parameters for the operational area involved. The discussion should identify the physical, environmental, economic and political reasons for the safety area's non-conformance with the current national design standard.

(3) Develop and discuss viable alternatives for accommodating the unique conditions. The viable alternatives should provide safety areas that maximize conformance to the current national design standard. This discussion should explain why the proposed variance/modification to standards is the only practicable and feasible alternative.

(4) Discuss how the variance/modification to airport design standards will provide an acceptable level of safety. This discussion should address how safety areas are improved (filling in low areas, grading to remove excessive slopes, replacing ditches with culverts, etc.), to the extent practicable, to provide the maximum size safety area possible. Aeronautical activity forecasts, along with overall safety area enhancement or maintenance, are factors to be considered for a variance/modification to standards for safety areas. Aeronautical activity forecasts to be considered are those that project a change in the critical aircraft, a change in the haul length or payload of the critical aircraft, or a significant change in aircraft operations. A discussion of these factors should be included to help explain how the proposed variance/modification to standards provides an acceptable level of safety.

6. Obligated airport owners shall hold fee simple or equivalent title to all safety areas in accordance with the current approved ALP, for that airport. FAR Part 139 airport owners shall hold fee simple or equivalent title to all safety areas that are included in their ACM/ACS for the airport. At non-obligated airports, the airport owner should, but is not required to hold fee simple or equivalent title to all safety areas.



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## APPENDIX 1.

Background

1. Canceled Advisory Circular 150/5300-12 - Airport Design Standards - Transport Airports (aircraft in approach categories C, D, & E), dated 2/28/83 with change 1 (dated 3/14/85) required safety areas 500' wide by 1000' long at the end of each runway. Safety areas for runways with stopways over 1000' long would extend to the end of the stopway. The runway safety area standard commenced at the runway end and not at the end of the stopway.

2. Canceled Advisory Circular 150/5300-4B - Utility Airports Air Access to National Transportation (Aircraft in Approach Categories A and B), dated June 24, 1975 with changes 1 through 9 (dated 9/18/87) required runway safety areas 120' to 300' wide and extending in length from 240' to 600' from the runway end. These safety areas varied with approach minimums and the aircraft design group. Runway safety areas for runways with stopways increased the safety area length to keep the stopway within the runway safety area. The declared distance concept introduced in change 8 did not require the runway safety area to extend the required length beyond a stopway or to precede the landing threshold. This same declared distance concept also applied to Advisory Circular 150/5300-12.

3. Current safety area design standards are in Advisory Circular 150/5300-13 with changes 1 through 5 (dated 11/10/94) that canceled Advisory Circulars 150/5300-4B and 150/5300-12 on May 18, 1989. Runway safety areas ranging in width from 120' to 500' and lengths ranging from 240' to 1000' are required at each runway end, stopway end, end of Landing Distance Available (LDA), and before the landing threshold. Tables 3-1, 3-2 and 3-3 contain the current runway safety area dimensional standards. A note on each of these tables states that the runway safety area begins at each runway end or at the stopway end when a stopway is provided. Taxiway safety area dimensional standards are presented in Table 4-1.

a. The standards and recommendations contained in advisory circular 150/5300-13 are recommended by the Federal Aviation Administration for use in the design of civil airports. For airport projects receiving Federal grant-in-aid assistance, the use of these standards is mandatory. At certificated airports, the standards and recommendations may be used to satisfy specific requirements of Federal Aviation Regulations (FAR) Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers, Subpart D.

b. Advisory Circular 150/5300-13 requires all airport development carried out at federally obligated airports to be done in accordance with a FAA-approved ALP. The FAA-approved ALP, to the extent practicable, should conform to the FAA airport design standards existing at the time of its approval. Due to unique site, environmental, or other constraints, the FAA may approve an ALP not fully complying with FAA airport design standards. Such approval requires an FAA study and finding that the proposed modification is safe for the specific site and conditions. When the FAA upgrades a standard, airport owners should, to the extent practicable, include the upgrade on the ALP before starting future development.

4. FAR Part 139.309(a). To the extent practicable, each certificate holder shall provide and maintain a safety area for each runway end and taxiway which is available for air carrier use:



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a. If the runway or taxiway had a safety area on December 31, 1987, and if no reconstruction or significant expansion of the runway or taxiway was begun on or after January 1, 1988, a safety area of at least the dimensions that existed on December 31, 1987; or

b. If construction, reconstruction, or significant expansion of the runway or taxiway began on or after January 1, 1988 a safety area that conforms to the dimensions acceptable to the Administrator at the time construction, reconstruction, or expansion began.

5. FAA Order 5280.5B, paragraph 325(b).

a. All surface variations, such as drainage ditches and culverts, within safety areas that existed as of December 31, 1987, must be documented in the Airport Certification Manual/Specifications. The safety area would extend only to the culvert or ditch and would be grand-fathered (FAR Part 139.309(a)(1)). Even if the full length/width of the current standard safety area cannot be achieved, it may be practicable to extend the safety area beyond the length/width that was grand-fathered. This might entail minor earthwork or the relocation of a ditch or culvert to provide the maximum safety area practicable.

b. Major pavement "reconstruction" projects that are part of an overall plan to extend the useful life of the runway/taxiway, and similar major pavement rehabilitation efforts, should be considered reconstruction triggering the safety area requirements of Section 139.309(a). Neither the addition of a porous friction course or grooving, nor a pavement overlay designed only to protect the structural integrity of the existing pavements as a means of achieving its originally anticipated useful life, is considered reconstruction under this provision. Significant "expansion" would include projects that are clearly designed to accept a different critical aircraft or to provide for increased payload or range for the existing critical aircraft using that pavement. As a guideline, the extension of a runway approximating 500 feet or more is considered "significant" for purposes of this provision.

6. Policy and Procedures Memorandum 5050.5C, paragraph 2. If the sponsor has an approved ALP, the only standard requiring compliance is the ALP, irrespective of its consistency with any other document.

a. We can strongly encourage a sponsor to revise the ALP to meet current design standards but cannot stop a sponsor from building a project that is in accordance with the approved ALP. FAA should strive to obtain a completed project that meets current design standards.

b. If a sponsor needs to add a runway extension to the ALP, they must use the FAA airport design standards currently in effect or obtain a modification to standards. In order to achieve a uniform appearance and standardization, the Sponsor should strive to have the entire runway meet the current airport design standards.

c. If the proposed runway extension constitutes a significant expansion, the sponsor should be asked to have the entire runway meet the current airport design standards. A significant expansion is defined as a project that is clearly designed to provide for a different critical aircraft or to provide for increased payload or range for the existing critical aircraft using the pavement. Normally a runway extension in excess of 1000 feet would be considered significant. This



inconsistency with the 500-foot criteria will be resolved in the next PPM revision.

d. If a runway extension is being added to an ALP using the current design standards (e.g. in preparation for a project) and the ALP shows another runway extension that was approved based on superseded design standards, this latter extension would not have to be revised to meet the current design standards, unless a safe, acceptable, operational environment cannot be maintained, the safe and efficient use of airspace is adversely affected, or the proposal impacts FAA facilities or equipment. It is not required that only one set of design standards be shown on an ALP.

e. A sponsor undertaking a Master Planning Study or an ALP update should use the FAA airport design standards in effect at that time. It is strongly recommended, but not mandatory, that "updates" incorporate current FAA airport design standards. If a prior-approved ALP used a superseded standard - that standard may be carried forward at the Sponsor's option (unless, as in 4. above, a safe acceptable, operational environment cannot be maintained, the safe and efficient use of airspace is adversely affected, or the proposal impacts FAA facilities or equipment).

f. From a FAR Part 139 standpoint, advisory circulars (AC's) in the 150 series contain standards and procedures that are acceptable to the Administrator. One way of meeting FAR Part 139 requirements is to meet the AC requirements. However, it may be possible to comply with FAR Part 139 without meeting the current FAA airport design standard. The following paragraph helps explain the intent of FAR Part 139 compliance requirements:

(1) With respect to the Section 130.309(a)(2) requirement for safety areas, a runway or taxiway extension of 500 feet (FAA Order 5280.5B, paragraph 325.b.) or more should normally be considered "significant expansion" for purposes of determining whether it is necessary to provide "a safety area which conforms to the dimensions acceptable to the Administrator at the time construction, reconstruction, or expansion began".

(2) The term "to the extent practical", pertains to the establishment of safety areas and states that "we should strive to obtain the safety area dimensions according to current design criteria whenever the establishment of a safety area is triggered by Section 139.309(a)(2)".

7. U.S. House of Representatives Report On Safety Areas. "The Committee is also concerned about the problem of inadequate safety areas beyond the ends of runways at certificated airports. This deficiency has resulted in airline accidents that could have been prevented. The standards for safety areas were changed in 1987, and some areas that did not meet the new standards were "grandfathered," meaning they continued to be certificated even though they failed to meet the new standards. In order to help remedy this problem and bring these airports up to current standards, the FAA should, within six months of enactment, complete a study and a cataloguing of runways used by air carriers at certificated airports to determine which runway safety areas do not meet current FAA standards. Within six months of enactment, the FAA should also determine the costs and the feasibility of bringing these runway safety areas up to standards."



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8. FAA Order 5200.8, Runway Safety Area Program. The objective of the RSA program is that all RSA's at federally obligated airports and airports certified under FAR Part 139 shall conform to the RSA standards in AC 150/5300-13 "Airport Design", to the extent practicable.

a. Whenever a project for a runway involves construction, reconstruction (including overlays), or significant expansion, the project shall also provide for improving the RSA in accordance with the ADO Manager's/Regional Airports Division Management's determination. Reconstruction and significant expansion are construed as any project that results in changing the capability of the airport or the load-bearing strength of the pavement, restores the original design life of the pavement, or changes the actual or potential design aircraft use.

b. The requirement to upgrade the RSA is applicable at FAR Part 139 airports regardless of the funding.

c. The requirements to upgrade the RSA is applicable at Federally obligated airports, if Federal or Passenger Facility Charge, (PFC) funds are used for the project.



APPENDIX 2.

Changes From Prior PPM

1. The PPM has been revised to reflect the runway safety area program of FAA Order 5200.8, dated October 1, 1999.
2. The PPM has been revised to reflect change 6 to AC 150/5300-13.
3. The runway safety area determination samples, provided by AGL-620 memorandum, dated May 10, 2000, have been incorporated into the PPM.
4. The RSA survey requirements have been included as Appendix 3.
5. Block Grant States may prepare and approve Runway Safety Area determinations for RSA's that meet current standards contained in AC 150/5300-13. However, FAA reserves the right to override any Block Grant State RSA determination decision.



## APPENDIX 3

Runway Safety Area (RSA) Survey Requirements  
For RunwaysObjective

The objective of the Runway Safety Area Program is that all RSA's at Federally obligated airports and all RSA's at airport certificated under 14 Code of Federal Regulations (CFR) Part 139, shall conform to the standards contained in AC 150/5300-13, Airport Design, to the extent practicable.

In support of this objective, we are requesting that each airport sponsor work with their consultant to provide the necessary information for an analysis of the airport runway safety areas to their respective Airports District Offices. This work will be an eligible expense to be reimbursed through the Airport Improvement Program process.

General

1. At this time, the analysis is required for runways which are currently certificated or that plan to be certificated in the next two years under FAR Part 139 for use by air carrier aircraft, and runways that are to be constructed, reconstructed, or significantly expanded by projects with Federal funds. However, the policy covers all runways at all Federally obligated airports.
2. A set of drawings shall be provided that depicts the required RSA (per AC 150/5300-13), the deviations from the design parameters outlined in paragraphs 305 and 502.b. of AC 150/5300-13, and each object, drainage ditch, and roadway within the RSA. All objects, ditches, and roadways shall be labeled. Also, the existing RSA (per the approved ACM/ACS) shall be depicted on the plan. A copy of the RSA excerpt from the approved ACM/ACS shall be included with the set of drawings.
3. The set of drawings provided shall include a Plan Sheet highlighting the areas of deviation and identifying the location of all objects (including Navaids) within the RSA. This RSA plan may be incorporated into the ALP. As supporting sheets to this overview, include either another plan sheet showing ground contours and/or profile and cross-section sheets with the appropriate information identified, to be able to quickly analyze the extent of the deviation from the design standards. The information gathered from the survey should be extensive enough to identify all areas of deviation.
4. Elevations and distances shall be to the nearest tenth of a foot.
5. Profiles and cross-sections shall depict the appropriate elevations and the calculated slope, in percent, between the elevation points.
6. Locate all objects (including Navaids), within the RSA, by distance out from the nearest runway end along the runway centerline, using runway stations, and offset from the runway centerline or runway centerline extended.
7. Locate all ditches and roadways by distance out from the nearest runway end along the runway centerline, using runway stations, and offset from the runway centerline or runway centerline extended.



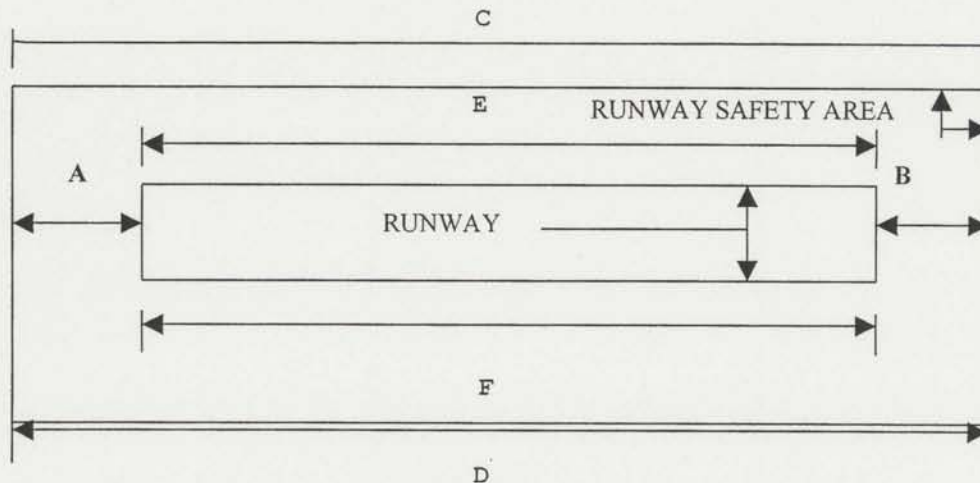
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Provide a profile for the ditch flow line or roadway centerline with elevations every 100 feet, within the RSA.

8. Profiles and cross-sections shall be based on runway stations.

Profiles and Cross-Sections

1. Provide a profile of the centerline of the RSA from each runway end to the end of the RSA (A & B), for each side of the runway safety area (C & D), and each side edge of the runway (E & F).



a. For RSA's with a constant grade, provide profile elevations at the ends of the RSA, at 200-foot intervals (from the end of the RSA to the other end of the RSA), and at the runway ends.

b. For RSA's with grade changes, provide profile elevations at the ends of the RSA, at every grade change, at 200-foot intervals (from the end of the RSA to the other end of the RSA), and at the runway ends.

2. Provide a cross-section at the ends of the RSA, every 200 feet (from the end of the RSA to the other end of the RSA), at grade changes (from the end of RSA to the other end of the RSA), and at the runway ends. If a grade change occurs within 50 feet of the 200-foot station, a cross-section does not have to be provided for the 200-foot station.

a. Provide elevations for each grade break on the cross-sections.

b. Cross-sections do not have to include the runway surface. Cross-sections are only required from the runway edge to the edge of the runway safety area.

## RSA MEETS CURRENT STANDARDS SAMPLE "A"

**NOTE: If no Nav aids are involved, delete concurrence by AGL-470 and revise the text appropriately.**

Subject: Runway Safety Area (RSA) Determination,  
Runway 14L/32R,  
Anywhere Airport, Anywhere, [ ].

Date:

From: Manager, [ ] Airports District Office

Reply to

Attn. Of: Unknown  
(847)294-0000

To: RSA Determination File

### REFERENCE DOCUMENTS

Advisory Circular 150/5300-13, current edition.

Airport Layout Plan, dated [ ]

Runway Safety Area Data Sheet, dated [ ]

Airport Certification Manual (ACM) or Airport Certification Specifications (ACS)

Airport Master Record, dated [ ]

Obstruction Chart, dated [ ]

Engineering plans, dated [ ]

Present and forecast aircraft activity estimates, dated [ ]

BACKGROUND INFORMATION – This runway is a category D group V runway. The dimensions of Runway 14L/32R are 10,000' long by 150' wide. Each end of the runway has a Category I precision instrument approach. Runway 32R has a medium intensity approach lighting system with runway alignment indicator lights (MALSR) and has straight in ILS approach minimums of 200-½. Runway 14L is without approach lights and has straight in ILS approach minimums of 200-¾.

Nav aids located within the RSA include a PAPI on the right side of Runway 14L, a PAPI on the left side of Runway 32R, a REIL on Runway 14L, and a MASLR on Runway 32R.

In accordance with AC 150/5300-13, Table [ ], the standard runway safety area for this runway has a required width of [ ] and length of [ ] beyond each end of the runway.

Runway 14L/32R was constructed between 1993 and 1997. The runway was designed and constructed to current design standards, including the RSA standards. The FAR Part 139 [inspection and/or inventory] confirms that the Runway 14L/32R RSA meets current standards, except for the fragility of Nav aids.

ALTERNATIVES AVAILABLE – N/A



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DISCUSSION - N/A

DETERMINATION - Based solely on a review of the above referenced documents, it has been determined that, at this time, the Runway 14L/32R safety area meets the current standards contained in AC 150/5300-13, except for the frangibility of Nav aids. The frangibility of the Nav aids identified above may not conform to the airport design standards for RSA's contained in AC 150/5300-13.

This determination is subject to FAA headquarters determining the practicability of changing the frangibility point for any Nav aid identified above that does not meet the 3 inches above grade requirement for a Nav aid located within the RSA.

This determination does not reflect a finding that the existing RSA compaction conforms to the appropriate compaction requirements.

This determination is preliminary and may be revised if additional information becomes available.

Prepared by: \_\_\_\_\_ Date [     ]  
Project Manager, [     ]-ADO or Block Grant State-[     ]

Recommended by: \_\_\_\_\_ Date [     ]  
Assistant Manager,[     ]Airports District Office, [     ]-ADO or Block  
Grant State - [     ]

This concurrence is based on our review of the Airway Facilities Division as-built drawings, for the above referenced Nav aids, and the applicable national standard drawings. It appears all Nav aids within the RSA are constructed with the frangible point at the lowest practical height that it is possible to achieve at this time.

Concurrence by: (Concurrence required only if Nav aids are in the RSA)  
\_\_\_\_\_ Date [     ]  
Acting Manager, Operations Branch, AGL-470

Approved by: \_\_\_\_\_ Date [     ]  
Manager, [     ] Airports District Office, [     ]-ADO-600 or Block Grant  
State [     ]

Attachment: RSA Data Sheet

## RSA CAN BE IMPROVED TO MEET CURRENT STANDARDS SAMPLE "B"

**NOTE: If no Nav aids are involved, delete concurrence by AGL-470 and revise the text appropriately.**

Subject: Runway Safety Area (RSA) Determination,  
Runway 14L/32R,  
Anywhere Airport, Anywhere, [ ].

Date:

From: Manager, [ ] Airports District Office

Reply to  
Attn. Of: Unknown  
(847)294-0000

To: RSA Determination File

### REFERENCE DOCUMENTS

Advisory Circular 150/5300-13, current edition.  
Airport Layout Plan, dated [ ]  
Runway Safety Area Data Sheet, dated [ ]  
Airport Certification Manual (ACM) or Airport Certification Specifications (ACS)  
Airport Master Record, dated [ ]  
Obstruction Chart, dated [ ]  
Engineering plans, dated [ ]  
Cost estimates, dated [ ]  
Present and forecast aircraft activity estimates, dated [ ]

BACKGROUND INFORMATION – This runway is a category D group V runway. The dimensions of Runway 14L/32R are 8,000' long by 150' wide. Each end of the runway has a Category I precision instrument approach. Runway 14L is without approach lights and has straight-in ILS approach minimums of 200-¾. Runway 32R has a medium intensity approach lighting system with runway alignment indicator lights (MALSR) and has straight-in ILS approach minimums of 200-½.

Nav aids located within the RSA include a PAPI on the right side of Runway 14L, a PAPI on the left side of Runway 32R, a REIL on Runway 14L, and a MASLR on Runway 32R. The Runway 14L Localizer is located on the Runway 14L centerline, 800' from the approach end of Runway 32R.

In accordance with AC 150/5300-13, Table [ ], the standard runway safety area for this runway has a required width of [ ] and a length of [ ] beyond each end of the runway.



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Runway 14L/32R was constructed in 1985, with a highway 850' from runway end 32R and the Black River 1050' from runway end 14L. The runway was designed and constructed to current design standards, including the RSA standards, except for the RSA beyond the approach end of Runways 32R. The full width RSA beyond runway end 32R extends only 850' to the fence along the highway. Also, the localizer is within the RSA due to the location of the highway fencing and the frangibility height exceeds the 3-inch requirement for the RSA. The FAR Part 139 [inspection and /or inventory] confirms that the remainder of the Runway 14L/32R RSA meets current standards, except for the frangibility of Nav aids.

ALTERNATIVES AVAILABLE – N/A

DISCUSSION - N/A

DETERMINATION - Based solely on the review of the above referenced documents, it has been determined that, at this time, the Runway 14L/32R safety area does not meet the current standards contained in AC 150/5300-13, but it is practicable to improve the RSA so that it will meet current standards, except for the frangibility of Nav aids. It appears technically feasible to meet the standard by relocating the highway, the fence, and the Runway 14L Localizer outside of the required RSA beyond Runway end 32R. The frangibility of the Nav aids identified above, may not conform to the airport design standards for RSA's contained in AC 150/5300-13.

This determination is subject to FAA headquarters determining the practicability of changing the frangibility point for any Nav aid identified above that does not meet the 3 inches above grade requirement for a Nav aid located within the RSA.

This determination does not reflect a finding that the existing RSA compaction conforms to the appropriate compaction requirements.

This determination is subject to the airspace review, environmental finding, and airport layout plan approval for the road and fence relocation, Runway 14L Localizer relocation, etc. to meet the RSA standard beyond runway end 32R.

This determination is preliminary and may be revised if additional information becomes available.

Prepared by: \_\_\_\_\_ Date [ ]  
[ ]  
Project Manager, [ ]-ADO or Block Grant State -[ ]

Recommended by: \_\_\_\_\_ Date [ ]  
[ ]  
Assistant Manager, [ ] Airports District Office, [ ]-ADO- or Block  
Grant State [ ]

April 2, 2003

PPM 5300.4A

Appendix 4

This concurrence is based on our review of the Airway Facilities Division as-built drawings, for the above referenced Nav aids, and the applicable national standard drawings. It appears all Nav aids within the RSA are constructed with the frangible point at the lowest practical height that it is possible to achieve at this time.

Concurrence by: (Concurrence required only if Nav aids are in the RSA)

[ ]

Date [ ]

Acting Manager, Operations Branch, AGL-470

Approved by:

[ ]

Date [ ]

Manager, [ ] Airports District Office, [ ] – ADO-600 Or Block Grant  
State [ ]

Attachment: RSA Data Sheet



April 2, 2003

## RSA CAN BE IMPROVED BUT WILL NOT MEET CURRENT STANDARDS SAMPLE "C"

**NOTE: If no Nav aids are involved, delete concurrence by AGL-470 and revise the text appropriately.**

Subject: Runway Safety Area (RSA) Determination,  
Runway 14L/32R,  
Anywhere Airport, Anywhere, [ ].

Date:

From: Manager, [ ] Airports District Office

Reply to

Attn. Of: Unknown  
(847)294-0000

To: RSA Determination File

### REFERENCE DOCUMENTS

Advisory Circular 150/5300-13, current edition.

Airport Layout Plan, dated [ ]

Runway Safety Area Data Sheet, dated [ ]

Airport Certification Manual (ACM) or Airport Certification Specifications (ACS)

Airport Master Record, dated [ ]

Obstruction Chart, dated [ ]

Engineering plans, dated [ ]

Cost estimates, dated [ ]

Present and forecast aircraft activity estimates, dated [ ]

BACKGROUND INFORMATION – This runway is a category D group V runway. The dimensions of Runway 14L/32R are 8,000' long by 150' wide. Each end of the runway has a Category I precision instrument approach. Runway 14L is without approach lights and has straight-in ILS approach minimums of 200-¾. Runway 32R has a medium intensity approach lighting system with runway alignment indicator lights (MALSR) and has straight-in ILS approach minimums of 200-½.

Nav aids located within the RSA include a PAPI on the right side of Runway 14L, a PAPI on the left side of Runway 32R, a REIL on Runway 14L, and a MASLR on Runway 32R. The Runway 14L Localizer is located on the Runway 14L centerline, 800' from the approach end of Runway 32R.

In accordance with AC 150/5300-13, Table [ ], the standard runway safety area for this runway has a required width of [ ] and a length of [ ] beyond each end of the runway.



Runway 14L/32R was constructed in 1985, with the interstate highway 850' from runway end 32R and the Black River 1050' from runway end 14L. The runway was designed and constructed to current design standards, including the RSA standards, except for the RSA beyond the approach end of Runway 32R. The full width RSA beyond runway end 32R extends only 850' to the fence along the highway. Also, the localizer is within the RSA due to the location of the interstate highway fencing and the frangibility height exceeds the 3-inch requirement for the RSA. The FAR Part 139 [inspection and/or inventory] confirms that the remainder of the Runway 14L/32R RSA meets current standards except for the frangibility of Nav aids.

ALTERNATIVES AVAILABLE – The evaluation of the alternatives provided for consideration in Order 5200.8, Runway Safety Area Program, indicates that the runway cannot be shifted to the north, since the six-lane interstate highway north of Runway end 32 cannot be relocated at a reasonable cost, and the runway cannot be realigned to obtain additional RSA, because of site restrictions and wind coverage. The declared distance concept cannot be implemented due to the landing length requirements of the design aircraft.

It does not appear technically feasible to relocate the interstate highway, the fence, and the localizer outside of the required RSA beyond runway end 32R. However, it appears feasible to shift the runway 50 feet to the south and obtain a 900 foot, full width, RSA beyond the end of Runway 32R. In addition, it appears feasible to grade the remaining required RSA to conform to standards from the 900' point (end of the full width RSA) to the highway right-of-way fence, leaving only a triangular-shaped area not conforming to the RSA standards. Also, it appears feasible to install an EMAS at the end of the runway.

#### DISCUSSION - N/A

DETERMINATION - Based solely on the review of the above referenced documents, it has been determined that, at this time, the Runway 14L/32R safety area does not meet the current standards contained in AC 150/5300-13.

The existing RSA can be improved to enhance safety, but the RSA will still not meet current standards, including the frangibility of Nav aids.

It appears technically feasible to enhance safety by shifting the runway 50 feet to the south and obtaining a 900-foot, full width RSA beyond the end of Runway 32R. In addition, it appears feasible to install EMAS at this runway end to improve the level of safety for the RSA.

The frangibility of the Nav aids identified above may not conform to the airport design standards for RSA's contained in AC 150/5300-13.

This determination is subject to FAA headquarters determining the practicability of changing the frangibility point for any Nav aid identified above that does not meet the 3 inches above grade requirement for a Nav aid located within the RSA.



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This determination does not reflect a finding that the existing RSA compaction conforms to the appropriate compaction requirements.

This determination is subject to the airspace review, an environmental finding, and airport layout plan approval for the runway shift and the RSA expansion.

This determination is subject to an analysis to determine if it is practicable and feasible to install EMAS and to make the incremental RSA enhancements.

This determination is preliminary and may be revised if additional information becomes available.

Prepared by: \_\_\_\_\_  
[ ] Date [ ]  
Project Manager, [ ]-ADO-[ ]

Reviewed by: \_\_\_\_\_  
[ ] Date [ ]  
Assistant Manager, [ ] Airports District Office, [ ]-ADO-[ ]

This concurrence is based on our review of the Airway Facilities Division as-built drawings, for the above referenced Nav aids, and the applicable national standard drawings. It appears all Nav aids within the RSA are constructed with the frangible point at the lowest practical height that it is possible to achieve at this time.

Concurrence by: Concurrence required only if Nav aids are in the RSA)  
[ ] Date [ ]  
Acting Manager, Operations Branch, AGL-470

Recommended by: \_\_\_\_\_  
[ ] Date [ ]  
Manager, [ ] Airports District Office, [ ]-ADO-600

Approved by: \_\_\_\_\_  
Jeri Alles Date [ ]  
Manager, Airports Division, AGL-600

Attachment: RSA Data Sheet

## RSA CANNOT BE IMPROVED AND WILL NOT MEET CURRENT STANDARDS SAMPLE "D"

**NOTE: If no Nav aids are involved, delete concurrence by AGL-470 and revise the text appropriately.**

Subject: Runway Safety Area (RSA) Determination,  
Runway 14L/32R,  
Anywhere Airport, Anywhere, [ ].

Date:

From: Manager, [ ] Airports District Office

Reply to

Attn. Of: Unknown  
(847)294-0000

To: RSA Determination File

### REFERENCE DOCUMENTS

Advisory Circular 150/5300-13, current edition.

Airport Layout Plan, dated [ ]

Runway Safety Area Data Sheet, dated [ ]

Airport Certification Manual (ACM) or Airport Certification Specifications (ACS)

Airport Master Record, dated [ ]

Obstruction Chart, dated [ ]

Engineering plans, dated [ ]

Cost estimates, dated [ ]

Present and forecast aircraft activity estimates, dated [ ]

BACKGROUND INFORMATION – This runway is a category D group V runway. The dimensions of Runway 14L/32R are 8,000' long by 150' wide. Each end of the runway has a Category I precision instrument approach. Runway 14L is without approach lights and has straight-in ILS approach minimums of 200-¾. Runway 32R has a medium intensity approach lighting system with runway alignment indicator lights (MALSR) and has straight-in ILS approach minimums of 200-½.

Nav aids located within the RSA include a PAPI on the right side of Runway 14L, a PAPI on the left side of Runway 32R, a REIL on Runway 14L, and a MASLR on Runway 32R. The localizers are located on the runway centerline, 300' from the approach ends of the runway.

In accordance with AC 150/5300-13, Table [ ], the standard runway safety area for this runway has a required width of [ ] and a length of [ ] beyond each end of the runway.

Runway 14L/32R was constructed in 1985, with the Black River 350' from runway end 14L and the interstate highway 350' from runway end 32R. The runway was designed



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and constructed to current design standards, including the RSA standards, except for the RSA beyond the approach ends of Runways 14L and 32R. The full width RSA beyond runway end 14L extends only 350' to the fence along the river and beyond runway end 32R 350' to the fence along the highway. Also, the localizers are within the RSA's due to the location of the river and interstate highway fencing. The frangibility height, for both localizers exceeds the 3-inch requirement for the RSA. The FAR Part 139 [inspection and/or inventory] confirms that the remainder of the Runway 14L/32R RSA meets current standards, except for the frangibility of Nav aids.

ALTERNATIVES AVAILABLE – The evaluation of the alternatives provided for consideration in Order 5200.8, Runway Safety Area Program, indicates that the runway cannot be shifted or realigned, since the river south of Runway end 14L and the six-lane interstate highway north of Runway end 32 cannot be relocated. The runway cannot be realigned to obtain additional RSA, because of site restrictions and wind coverage. The declared distance concept cannot be implemented nor can the runway length be reduced due to the landing length requirements of the design aircraft. It does not appear practicable to install an EMAS at either end of the runway due to the limited distance from runway end 14L to the river and runway end 32R to the interstate highway.

It does not appear technically feasible to relocate the river, the interstate highway, the fence, or the localizers outside of the required RSA beyond runway ends 14L and 32R.

#### DISCUSSION - N/A

DETERMINATION - Based solely on the review of the above referenced documents, it has been determined that at this time, the Runway 14L/32R safety area does not meet the current standards contained in AC 150/5300-13, and it is not practicable to improve the RSA including the frangibility of Nav aids:

The frangibility of the Nav aids identified above may not conform to the airport design standards for RSA's contained in AC 150/5300-13.

This determination is subject to FAA headquarters determining the practicability of changing the frangibility point for any Nav aid identified above that does not meet the 3 inches above grade requirement for a Nav aid located within the RSA.

This determination does not reflect a finding that the existing RSA compaction conforms to the appropriate compaction requirements.

This determination is subject to an analysis to determine the practicability and feasibility to construct EMAS facilities at either runway end.

This determination is preliminary and may be revised if additional information becomes available.

Prepared by:

[ ] Date [ ]  
Project Manager, [ ]-ADO-[ ]

Reviewed by: \_\_\_\_\_  
[ ] Date [ ]  
Assistant Manager, [ ] Airports District Office, [ ]-ADO-[ ]

This concurrence is based on our review of the Airway Facilities Division as-built drawings, for the above referenced Nav aids, and the applicable national standard drawings. It appears all Nav aids within the RSA are constructed with the frangible point at the lowest practical height that it is possible to achieve at this time.

Concurrence by: Concurrence required only if Nav aids are in the RSA)  
[ ] Date [ ]  
Acting Manager, Operations Branch, AGL-470

Recommended by: \_\_\_\_\_  
[ ] Date [ ]  
Manager, [ ] Airports District Office, [ ]-ADO-600

Approved by: \_\_\_\_\_  
Jeri Alles Date [ ]  
Manager, Airports Division, AGL-600

Attachment: RSA Data Sheet



